

Example #1: A 10 ampere current flows through a wire in 60 seconds.

Determine:

- a) The amount of charge that moves in 60 seconds.
- b) The number of electrons that pass in 60 seconds.

$$a) \quad I = \frac{q}{t}$$

$$\Rightarrow q = 10(60) = \boxed{6.0 \times 10^2 \text{ C}}$$

$$b) \quad 600 \text{ C} \times \frac{1 e^-}{1.6 \times 10^{-19} \text{ C}}$$

$$= \boxed{3.8 \times 10^{21} e^-}$$